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SENATE.

} REPORT
} No. 348.

RADIUM.

MARCH 16, 1914.—Ordered to be printed.

U. S. Cong. Senate.

Mr. WALSH, from the Committee on Mines and Mining, submitted the following

REPORT.

[To accompany S. 4405.]

The Committee on Mines and Mining, to which was referred the bill (S. 4405) to provide for and encourage the prospecting, mining, and treatment of radium-bearing ores in lands belonging to the United States, for the purpose of securing an adequate supply of radium for Government and other hospitals in the United States, and for other purposes, reports:

HEARINGS.

In the belief that the radium situation in the United States in its bearing upon pending legislation had been adequately set forth before the House Committee on Mines and Mining, it was not originally intended to arrange for hearings before the Senate committee; but the parties who appeared before the House committee in opposition to this legislation asked to be further heard before the Senate committee, and the request was granted to the extent that hearings were begun on February 10, 1914, and continued at intervals during the two weeks following. Before the conclusion of these hearings the Director of the Bureau of Mines and Mr. Hess, as representing the United States Geological Survey, were asked to furnish the committee certain information on this subject; and Dr. Anderson, of the Public Health Service, was asked to inform the committee as to the quantity of radium needed for use in connection with the Government hospitals, and how this radium could be best used in connection with the needs of the general public.

GENERAL STATEMENT.

The bill as reported gives the Government the prior right to purchase radium-bearing ores mined from the public lands located after

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the passage of this act at such prices, to be fixed by the Secretary of the Interior and published in advance, as will encourage the prospecting for and mining of such ores by private parties. It also authorizes the Secretary of the Interior to provide the necessary building and equipment with which to extract the radium from these ores; to sell the by-products obtained in connection with such operations. The prospector and miner is thus given the assurance of a steady market and prompt payment at reasonable prices for the ores which he mines; and, if at any time the Government is not prepared to purchase such ores, he is authorized to sell them in the open market.

NECESSITY FOR SUCH LEGISLATION.

The report of the House Committee on Mines and Mining (H. R. 214) sets forth so clearly the radium situation and the need for such legislation that it calls for but brief further treatment.

In the first place, the call for this legislation has a humanitarian basis because of its relations to public health, and the arguments which might be raised against the Government's entering into mining or metallurgical operations in relation to other mineral substances, which might have a purely commercial basis, might not apply in this instance:

The experiences of the few surgeons in this and other countries who have been able to secure a sufficient quantity of radium for use in the treatment of disease have demonstrated beyond reasonable doubt the importance of radium as a cure for certain superficial types of cancer, and give promise of its value in supplementing surgical operations in the treatment of other forms of cancer if this treatment can be begun in the early stages of the disease and as surgeons secure radium enough to become more experienced in methods of its application.

Best statistics available show that there are in the United States at the present time no less than 200,000 persons suffering from cancer, and that the death list in the United States from this dread disease is not less than 75,000 persons each year.

At the present time there are not more than 40 grams of radium in all countries available for the use of medical science, and of this quantity not more than 2 grams are available for use in the United States.

The world's supply of radium ores outside of the United States is so small that the best available estimates indicate that during 1914 all of the ores mined in these countries will yield but 12 grams (less than one-half ounce) of radium bromide.

The most important and the most extensive radium ore deposits known are those in Colorado and Utah, all of these until quite recently on public lands of the United States. During the past 12 to 18 months all of the known deposits of radium-bearing ores on these public lands have been taken up by private parties. Many of them are now held by foreign corporations, while many other claims are held by American citizens who are acting as agents or representatives of foreign corporations. During the year 1913, of the 2,140 tons of radium-bearing ores mined in the United States, ores containing one-half of the radium content were shipped abroad for treatment.

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The remainder were held in the United States for treatment by two American plants located in the State of Pennsylvania. The radium extracted by these two plants during 1913 from American ores will be sold in the open market at prices which are believed to be largely speculative—\$120,000 to \$160,000 per gram (a quantity about equal to a garden pea); and, as brought out before the House committee, the larger of these two concerns is already under agreement to furnish the larger part of this output for 1914 to foreign purchasers.

The quantity of radium needed for the work of the Public Health Service at its more than 20 hospitals distributed throughout the United States and for the Army and Navy hospitals was stated before the committee to be 30 grams (about 1 ounce). The estimates submitted indicate that a plant to be operated by the Government as proposed in this legislation could produce this quantity of radium at a cost less than half of the above-named prices. And, in addition to this saving to the Government of more than \$1,500,000, the publication of the results of all the Government's operations as to processes, costs, etc., would benefit the western miners and the public by facilitating fair dealing and open competition.

As indicating the importance of prompt action in this matter, it may be stated that since the introduction of the legislation now being considered the representatives of the foreign purchasers of radium ores and of the two radium extraction plants in the United States have been making rush examinations of the entire radium ore field in Colorado and Utah, and have been locating every area of public land on which there was evidence of the occurrence of radium-bearing ores.

As the situation now stands, the public lands containing this resource of peculiar importance to the people of this country are being taken into private ownership in such manner as seems likely to bring the control of the radium supply into the hands of a few persons, to whom the hospitals of this country must pay exorbitant profits. In addition, the fact that the extraction of radium is carried on by secret processes lends itself to and facilitates the establishment of monopoly.

In view of the foregoing the committee recommend that the bill be passed with the following amendments:

On page 1, line 3, after the word "That," insert the word "hereafter."

On page 1, line 9, after the word "provided," strike out "and all said ores here-," and, continuing on page 2, strike out lines 1, 2, and 3, and the words "sold and delivered" in line 4.

On page 2, line 16, strike out the period after the word "issued" and insert the following:

for lands located under this act: *Provided*, That if the United States shall at any time fail or refuse to purchase any such radium ores of sufficient value to be merchantable, extracted from any such lands so located, whether patented or unpatented, upon the tender of the same for sale in carload lots at any railroad station, the exclusive right of the United States to purchase such ore or any ores thereafter extracted from the mining claim from which the same were mined and from all other mining claims contiguous thereto and held in common therewith, as well as the right to enter upon the same for failure diligently to mine any of such claims, shall thereupon cease, and the unrestricted right of disposition of all ores within such claims or extracted therefrom shall thereupon accrue to the owner, lessee, or other rightful occupant thereof.

Strike out section 2, on pages 2 and 3, and insert in lieu thereof the following:

SEC. 2. That the Secretary of the Interior be, and he is hereby, authorized to lease for the purpose of exploration and development of radium-bearing ores unallotted lands within Indian reservations now existing or hereafter established by act of Congress or Executive order in such quantities and upon such terms and conditions and under such rules and regulations as he may prescribe: *Provided*, That such radium-bearing ores when mined shall be sold and delivered to the United States as herein provided: *And provided further*, That all royalties derived from any such leases or rentals or other moneys paid on account of the same shall be deposited to the credit of the Indians entitled to occupy the reservation from which the same come, to be expended for their benefit, as the Secretary of the Interior may direct.

On page 3, line 6, after the word "ores," insert the words "from lands located under the provisions of this act."

On page 4, line 1, after the word "at," strike out the words "such prices to be fixed" and insert in lieu thereof the words "the market price to be determined."

On page 4, line 3, after the word "year," strike out the words "as will insure the prospecting for and," and on the same page, in line 4, strike out the words "mining of such ores."

On page 4, line 22, strike out the word "authorized" and insert in lieu thereof the word "appropriated."

Add, after section 6, sections 7 and 8, as follows:

SEC. 7. That nothing herein contained shall be construed to affect or abridge the right, in good faith, to locate or appropriate (under existing laws) any public lands, whether mineral or otherwise, not known by the locator or appropriator to be of value because of any radium-bearing ores therein, and any patent issued for such lands so located or appropriated shall be unlimited in character except as in such laws provided, anything in this act to the contrary notwithstanding.

SEC. 8. Except as herein provided the general laws in relation to the disposition of mining lands shall be applicable to the lands in this act referred to containing radium-bearing ores.

